



# English

Translation of the original instructions – ID132/221/0/140

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## General

ekey biometric systems GmbH operates a quality management system in compliance with EN ISO 9001:2008 and is certified accordingly.

### Note

This manual forms a component of the product. Ensure that it is stored in a safe place. Please contact your dealer for further information about the product.

### Product liability and limitation of liability

Safe operation and function of the machine can be impaired in the following situations. Liability due to malfunctioning is transferred to the operator/user in such cases:

- The system devices are not installed, used, maintained and cleaned in accordance with the instructions.
- The system devices are not used within the scope of proper use.
- Unauthorised modifications are carried out on the system devices by the operator.

These operating instructions are not subject to updating. Subject to optical and technical modifications, any liability for errors and misprints excluded.

### Warranty and manufacturer's warranty

Our general terms and conditions apply as valid at the date of purchase. See <http://www.ekey.net>.

ekey biometric systems GmbH provides a 24-month warranty for material or processing defects. This warranty is only valid in the country where the product was purchased. The product may only be used with original ekey spare parts and accessories.

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## Notices, symbols and abbreviations



### NOTICE

Denotes additional information and useful tips.

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### DANGER

Denotes imminent danger which could lead to death or serious injuries.

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### ATTENTION

Denotes possible property damage which cannot result in injuries.

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## Symbols:

|                                                                                  |                                           |
|----------------------------------------------------------------------------------|-------------------------------------------|
| 1.                                                                               | Step-by-step instructions                 |
|  | Reference to sections of this manual      |
|  | Reference to the mounting instructions    |
|  | Reference to the wiring diagram           |
| □                                                                                | Listing without specified order, 1. level |
| <i>ekey home FS UP</i>                                                           | Product names                             |

## Abbreviations:

|     |                       |
|-----|-----------------------|
| AP  | Wall-mounted          |
| FAR | False Acceptance Rate |
| FRR | False Rejection Rate  |
| FS  | Finger scanner        |
| IN  | integra               |
| SE  | Control panel         |
| UP  | Outlet-mounted        |

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## Safety information

### DANGER

**All *ekey home* devices are to be operated with safety extra-low voltage (SELV). Only use power supplies rated protection class 2 according to VDE 0140-1. Failure to do so will result in life-threatening danger due to electric shock. Only certified electricians are authorised to carry out the electrical installation!**

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**Life-threatening danger resulting from electricity**

Mount the control panel in a safe internal area. This prevents tampering from the outside.

**Safety against tampering**

# Product description

## System overview

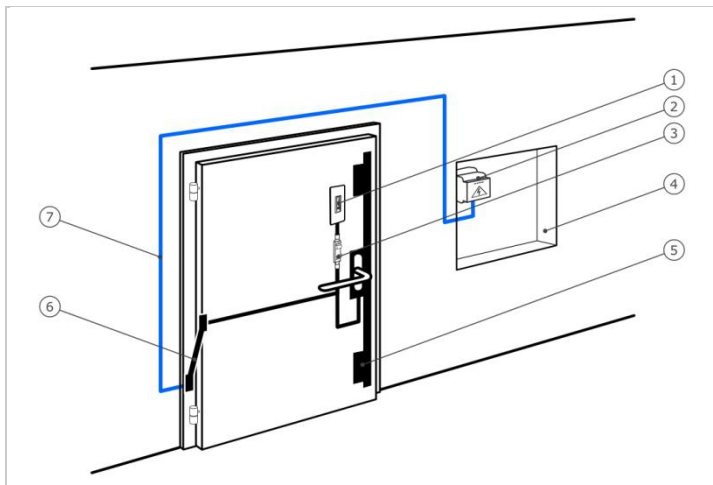


Fig. 1: Overview of the system

- 1 Finger scanner
- 2 Power supply
- 3 Control panel
- 4 Distributor
- 5 Motorised lock
- 6 Cable transfer
- 7 Connecting cable

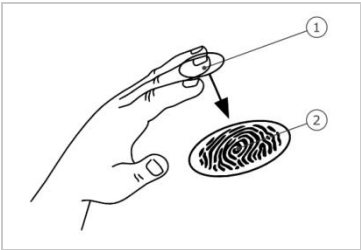
## Scope of delivery

- ☐ Finger scanner;
- ☐ Control panel;
- ☐ Operating instructions, mounting instructions, wiring diagram;
- ☐ Optional: matching accessories (cable transfer, power supply, connecting cable, covers, etc.).

## Proper use and areas of application

This product is a finger scan access control system. The system is comprised of a finger scanner and control panel. It is available in various makeups and component combinations. It detects the characteristics of the fingerprint contours, compares them to the stored fingerprint image and opens in the event of a match.

The system is primarily designed for opening house doors, apartment doors and garage doors in homes, businesses and limited industrial areas.



- 1 Front phalanx
- 2 Fingerprint

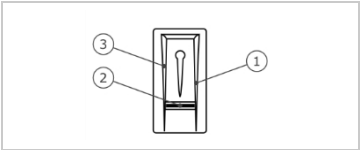
Fig. 2: Fingerprint

The finger scanner detects the fingerprint by means of a line sensor and subsequently processes it. It then compares the result with the stored fingerprint image. The finger scanner only works correctly and reliably with the front phalanx print. Draw your finger steadily and evenly over the sensor in the correct position.

Finger scanner controls

| Controls              | Function                                                                                  |
|-----------------------|-------------------------------------------------------------------------------------------|
| <b>Finger swiping</b> | Take fingerprints by 'swiping the finger' evenly downwards over the sensor.               |
| <b>Sensor</b>         | System programming by 'finger touch', a short, rapid touch of the sensor with the finger. |

Table 1: Finger scanner controls



- 1 Right guiding edge
- 2 Sensor
- 3 Left guiding edge

Fig. 3: Finger swiping

Correct operation of the finger scanner

Incorrect operation will impair the function of the finger scanner.

'Swiping the finger':

| Step | Figure | Description                                                                                       |
|------|--------|---------------------------------------------------------------------------------------------------|
| 1.   |        | Hold your finger straight, place it centrally between the guiding edges. Do not twist the finger. |

| Step | Figure | Description                                                                                                                                                                                                   |
|------|--------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 2.   |        | Place the joint of the front phalanx directly onto the sensor. Place your finger flat onto the finger guide.                                                                                                  |
| 3.   |        | Stretch out the neighbouring fingers.                                                                                                                                                                         |
| 4.   |        | Move your finger evenly downwards over the sensor. Move the whole hand simultaneously. Draw the front phalanx fully over the sensor in order to achieve optimal results. The movement takes approx. 1 second. |

### 'Finger Touch':

| Step | Figure | Description                                |
|------|--------|--------------------------------------------|
| 1.   |        | Briefly touch the sensor with your finger. |

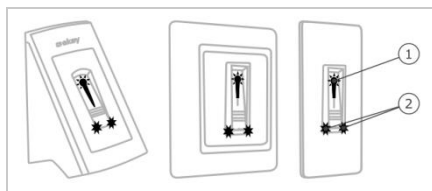
### General hints for achieving a good-quality fingerprint image:

- ☐ The index, middle and ring fingers work best. The thumb and little finger work marginally or not at all.
- ☐ If the fingers are frequently wet, save the images with wet fingers.
- ☐ Children's fingerprints work from approx. 5 years of age.

### Optical signals on the finger scanner

There are 2 types of LEDs:

- ☐ Status LED for operating status;
- ☐ Function LED for indicating the function of the overall system.



- 1 Status LED
- 2 Function LEDs

Fig. 4: Optical signals on the finger scanner

Control panels are available in 2 makeups. You can only operate a single finger scanner per control panel. Any finger scanner works with every control panel.

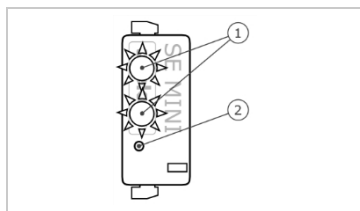
| Product name   | <i>ekey home CP mini 1</i>                                                        | <i>ekey home CP micro 1</i>                                                       |
|----------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|
| Figure         |  |  |
| Mounting types | Top hat rail mounting<br>1 relay, 1 input                                         | Integration into doors<br>1 relay.                                                |

Table 2: Control panel makeups

### Function of the control panel

The control panel is the actuator of the system. It serves to switch one or more relays.

### Controls and optical signals of the control panel



- 1 Status LEDs
- 2 Button

Fig. 5: Overview of the *ekey home CP mini 1*

The upper status LED indicates if the control panel is connected to the finger scanner. The lower status LED indicates when the relay switches.

| Button operation                  | Function                               |
|-----------------------------------|----------------------------------------|
| Press and hold button for 1 sec.  | Coupling control panel/finger scanner. |
| Press and hold button for 4 secs. | Reset to default settings.             |

Table 3: Button operation for *ekey home CP mini 1*

The *ekey home CP micro 1* has no controls or optical signals.

## Technical specifications

| Description                 | Unit         | Value                                                               |
|-----------------------------|--------------|---------------------------------------------------------------------|
| <b>Supply</b>               | VAC/VDC      | 8-24                                                                |
| <b>Power input</b>          | W            | Heating off: 1<br>Heating on: 3                                     |
| <b>Temperature range</b>    | °C           | WM, IN: -25 to +70<br>OM: -20 to +70                                |
| <b>Memory</b>               | Fingerprints | 99                                                                  |
| <b>Safety</b>               | FAR<br>FRR   | 1:10,000,000<br>1:100                                               |
| <b>Protection class</b>     | IP           | WM, IN: 54 (front side)<br>OM: 33/43/64 (depending on installation) |
| <b>Speed</b>                | s            | 1-4                                                                 |
| <b>Operational lifetime</b> | Finger scans | approx. 10 million                                                  |

Table 4: Technical specifications: *ekey home finger scanners*

| Designation                                                           | Unit           | Value                      |                             |
|-----------------------------------------------------------------------|----------------|----------------------------|-----------------------------|
|                                                                       |                | <i>ekey home CP mini 1</i> | <i>ekey home CP micro 1</i> |
| <b>Supply</b>                                                         | VAC/VDC        | 8-24                       | -/8-24                      |
| <b>Power input</b>                                                    | W              | approx. 1                  | approx. 1                   |
| <b>Relays</b>                                                         | Quantity       | 1                          | 1                           |
| <b>Switching capacity</b>                                             | VDC/A<br>VAC/A | 42/2                       | 42/2                        |
| <b>Temperature range</b>                                              | °C             | -20 to +70                 | -25 to +60                  |
| <b>Protection class</b>                                               | IP             | 20                         | 20                          |
| <b>Digital inputs (only potential-free contacts may be connected)</b> | Quantity       | 1                          | -                           |

Table 5: Technical specifications: *ekey home control panel mini* and *ekey home control panel micro*

# Installation

## ATTENTION



Mount and cable the product correctly before connecting power.  
Possible property damage!  
Do not connect the power supply beforehand!

Mount the system in accordance with the supplied mounting instructions.



Cable the system in accordance with the supplied wiring diagram.



| Step | Action                                                           | Display                                                                                                                                                                                            |
|------|------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   | Ensure safe installation of the devices. Close the covers.       | -                                                                                                                                                                                                  |
| 2.   | Connect the power supply to the mains.                           |  Only for <i>ekey home CP mini 1</i> :<br>The upper status LED on the control panel flashes red: default setting. |
| 3.   | No action required.                                              |  The status LED on the finger scanner lights up orange, the function LEDs flash green: default setting.           |
| 4.   | If the LEDs fail to light up, check the wiring and power supply. | -                                                                                                                                                                                                  |

# Implementation

Implementing the devices enables storage of the administrator fingers. The administrator fingers serve exclusively for programming the system. In contrast to the user fingers, they cannot be used to open doors. The following steps apply to the *ekey home CP mini 1* only. These steps are carried out automatically for the *ekey home CP micro 1*.

## Implementing the devices

| Step | Action                                                                              | Description                                                                                     | Display                                                                             |
|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
| 1.   |  | Press and hold the button with the operating rod for 1 sec. The upper status LED flashes green. |  |
| 2.   | No action required.                                                                 | The status LED lights up orange, the function LEDs flash green:                                 |  |

The finger scanner is ready to record the administrator fingers.

## Storing administrator fingers and configuring normal mode

You must store 4 administrator fingers. You cannot use administrator fingers as user fingers. Use fingers that are not intended to be used for opening doors as administrator fingers. We recommend storing 2 fingers of 2 different people for this purpose.

| Step | Action                                                                            | Description                                                                                                | Display                                                                                                                                                                                                                                                        |
|------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   |  | Draw administrator finger 1 over the sensor in order to record it.                                         |  Status LED lights up green, the function LED lights up green.<br> Status LED lights up red. |
|      |  | Administrator finger 1 was not stored. Draw the finger over the sensor again.                              | -                                                                                                                                                                                                                                                              |
| 2.   | No action required.                                                               | -                                                                                                          |  Status LED lights up orange, the function LEDs flash green.                                                                                                                  |
| 3.   |  | Carry out step 1 for administrator fingers 2, 3 and 4, in order to store administrator fingers 2, 3 and 4. |  Status LED lights up blue.                                                                                                                                                   |

All administrator fingers were successfully stored. The system is in normal mode.

## Saving user fingers

The system enables the enrolment of maximum 99 user fingers.

A user finger is any finger which is used for triggering an action on the control panel, e.g. opening a door. We recommend storing 2 fingers in each case.

The system is in normal mode.

| Step | Action                                                                              | Description                                                                         | Display                                                                                                                                                                                                                                                       |
|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   |   | Draw any administrator the finger over the sensor.                                  |  Status LED lights up blue, the function LEDs flash green.<br> Status LED lights up red. |
|      |  | The administrator finger was not recognised. Draw the finger over the sensor again. | -                                                                                                                                                                                                                                                             |
| 2.   |  | Carry out a 'finger touch' on the sensor within 5 seconds.                          |  Status LED lights up orange, the function LEDs light up green.                                                                                                            |

| Step                                                                              | Action                                                                            | Description                                                                 | Display                                                                                                                                                                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 3.                                                                                |   | Draw the user finger over the sensor.                                       |  Status LED and function LED light up green.<br> Status LED lights up red. |
|  |  | The user finger was not accepted. Repeat the procedure beginning at step 1. | - -                                                                                                                                                                                                                                         |
| 4.                                                                                | No action required.                                                               | -                                                                           |  Status LED lights up blue.                                                                                                                                |

The user finger was stored. The system is in normal mode.

## Use

The primary purpose the product is to open doors. The system is in normal mode.

### Opening a door

| Step                                                                              | Action                                                                            | Description                                        | Display                                                                                                                                                                                                                      |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|----------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                                                                                |  | Draw a stored user finger over the sensor.         |  Status LED lights up green.<br> Status LED lights up red. |
|  |  | The user finger was not recognised. Repeat step 1. | - -                                                                                                                                                                                                                          |
| 2.                                                                                | No action required.                                                               | The door opens.                                    |  Status LED lights up blue.                                                                                                                 |

The system is in normal mode.

### NOTICE

You can also open the door using the digital input (PIN 7, 8) on the *ekey home CP mini 1*.

You can only delete individual fingers of a user if the person is present.  
The system is in normal mode.

### Deleting user fingers

| Step | Action                                                                            | Description                                                                                                                                   | Display                                                                                                                                                                                                                                                   |
|------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   |   | Draw any administrator the finger over the sensor.                                                                                            |  Status LED lights up blue, the function LEDs flash green.<br> Status LED lights up red. |
|      |  |  The administrator finger was not recognised. Repeat step 1. | -                                                                                                                                                                                                                                                         |
| 2.   |  | Wait for 5 seconds.                                                                                                                           |  Status LED lights up blue, the function LEDs flash red/green.                                                                                                           |
| 3.   |  | Carry out a 'finger touch' on the sensor.                                                                                                     |  Status LED lights up blue, the function LEDs flash left red, right green.                                                                                               |
| 4.   |  | Draw the user finger to be deleted over the sensor.                                                                                           |  Status LED flashes red, the function LEDs flash left red, right green.                                                                                                  |
| 5.   | No action required.                                                               | -                                                                                                                                             |  Status LED lights up blue.                                                                                                                                              |

The user finger was deleted. The system is in normal mode.

## Deleting all user fingers

All user fingers in the system will be deleted. The administrator fingers are retained.

The system is in normal mode.

| Step | Action                                                                              | Description                                                                                                                                     | Display                                                                                                                                                                                                                                                      |
|------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   |    | Draw any administrator finger over the sensor.                                                                                                  |  Status LED lights up blue, the function LEDs flash green.<br> Status LED lights up red. |
|      |  |  The administrator finger was not recognised. Repeat step 1. | -                                                                                                                                                                                                                                                            |
| 2.   |  | Wait for 5 seconds.                                                                                                                             |  Status LED lights up blue, the function LEDs flash red/green.                                                                                                            |
| 3.   |  | Carry out a 'finger touch' on the sensor.                                                                                                       |  Status LED lights up blue, the function LEDs flash left red,                                                                                                             |

| Step | Action                                                                            | Description                                                                                           | Display                                                                                                                                                  |
|------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------|
| 4.   |  | Draw the same administrator finger over the sensor as in step 1.                                      |  right green.<br>Status LED flashes red, the function LEDs flash green. |
| 5.   | No action required.                                                               | -                                                                                                     |  Status LED lights up blue.                                             |
| 6.   |  | Draw any user finger over the sensor in order to verify. No finger should now be able to gain access. |  Status LED lights up red.                                              |
| 7.   | No action required.                                                               | -                                                                                                     |  Status LED lights up blue.                                             |

All user fingers were deleted. The system is in normal mode.

You can reset the system to its default settings either via the finger scanner or using the control panel. Use whichever device is most easily accessible.

## Resetting the system to default settings

### Via the finger scanner

The finger scanner will be reset to its default settings. All user and administrator fingers will be irrecoverably deleted.

The system is in normal mode.

| Step                                                                               | Action                                                                              | Description                                                         | Display                                                                                                                                                                                                                                                    |
|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|---------------------------------------------------------------------|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| 1.                                                                                 |    | Draw any administrator finger over the sensor.                      |  Status LED lights up blue, the function LEDs flash green.<br> Status LED lights up red. |
|  |   | The administrator finger was not recognised. Repeat step 1.         | -                                                                                                                                                                                                                                                          |
| 2.                                                                                 |  | Wait for 5 seconds.                                                 |  Status LED lights up blue, the function LEDs flash red/green.                                                                                                          |
| 3.                                                                                 |  | Carry out a 'finger touch' on the sensor.                           |  Status LED lights up blue, the function LEDs flash left red, right green.                                                                                              |
| 4.                                                                                 |  | Draw a different administrator finger over the sensor than was used |  Status LED flashes green, the function LEDs flash red.                                                                                                                 |

| Step | Action                                                                            | Description         | Display                                                                                                                                          |
|------|-----------------------------------------------------------------------------------|---------------------|--------------------------------------------------------------------------------------------------------------------------------------------------|
|      |                                                                                   | in step 2.          |                                                                                                                                                  |
| 5.   |  | Wait for 5 seconds. | <br>Status LED lights up orange, the function LEDs flash green. |
| 6.   | No action required.                                                               | -                   | <br>The upper status LED flashes green.                         |

The finger scanner has been reset to its default settings. You can now recommission the system.

### Via the control panel

Resetting to the default settings is only possible with the *ekey home CP mini 1* and is initiated via the control panel. This can only be undertaken for the *ekey home CP micro 1* at the factory.

| Step | Action                                                                            | Description                                                              | Display                                                                                                                                       |
|------|-----------------------------------------------------------------------------------|--------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|
| 1.   |  | Press and hold the button with the operating rod for at least 4 seconds. |  Status LED flashes red.                                     |
| 2.   | No action required.                                                               | -                                                                        |  Status LED lights up orange, the function LEDs flash green. |

The control panel has been reset to its default settings. You can now recommission the system.



See Implementing the devices page 9.

### Updating the software

We are working to constantly improve our products and add new functionalities. Correspondingly, updates are made available for the finger scanner and control panel software. More information about this can be obtained from your dealer.

## Error displays and troubleshooting

| Display                                                                                                       | Meaning                                                                   | Remedy                                 |
|---------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------|----------------------------------------|
|  Status LED lights up red. | The finger was not recognised                                             | Draw the finger over the sensor again. |
|  Status LED lights up red. | The finger scanner lights up red immediately. No fingerprints are stored. | Store a minimum of one fingerprint.    |

If these suggestions fail to solve the problem, the system must be returned to ekey biometric systems GmbH for repair. Please ship the

equipment in suitable packaging. Improper packaging can lead to the warranty being voided.

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## Maintenance

The system is largely maintenance-free. The sensor surface is essentially self-cleaning due to repeated use (swiping of fingers). However, if the finger scanner becomes soiled, clean it with a damp (not wet), non-abrasive cloth. Use clean water without adding detergent. Treat the sensor surface with care.

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## Dismantling and disposal

Pursuant to Directive 2002/96/EC of the European Parliament and Council of 27 January 2003 on the sale, return and environmentally friendly disposal of electrical and electronic equipment (WEEE) supplied after 13/08/2005, electrical and electronic equipment is to be recycled and may not be disposed of with household waste. As disposal regulations within the EU can differ from country to country, please contact your dealer for further information as necessary.



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## Declaration of conformity

ekey biometric systems GmbH hereby declares that the product conforms to the relevant provisions of the Electromagnetic Compatibility Directive 2004/108/EC of the European Union. The complete text of the declaration of conformity can be downloaded from <http://www.ekey.net/downloads>.

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## Copyright

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